Is the 9-valent HPV vaccine safe and effective long term?

Yes. The 9-valent HPV vaccine conferred immunity for more than 10 years in 80% to 95% of boys and girls who received 3 doses of vaccine between ages 9 and 15, according to results of a follow-up study that included 971 girls and 301 boys. In the 10 years following vaccination, rates of infection with HPV were low. There were no cases of high-grade intraepithelial neoplasia or condyloma and no adverse safety events.

Restrepo J, Herrera T, Samakoses R, et al. Ten-year follow-up of 9-valent human papillomavirus vaccine: immunogenicity, effectiveness, and safety. Pediatrics. 2023;152:e2022060993. doi:10.1542/peds.2022-060993

EXPERT COMMENTARY

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Infection with human papillomavirus (HPV) is associated with nearly all cases of cervical cancer. Long-term safety and efficacy of the bivalent (Cervarix) and quadrivalent (Gardasil) vaccines have been demonstrated for up to 10 to 14 years.[1-6] It is estimated that the 9-valent vaccine (Gardasil 9), which was licensed in 2014 and protects against HPV 16/18/31/33/45/52/58 and HPV 6/11, could prevent up to 90% of cervical cancer cases. The bivalent and quadrivalent vaccines could ideally prevent 70% of cases of cervical cancer. In a recent study, authors compared the efficacy and safety of the newer 9-valent vaccine at 10 years with long-term outcomes of previous vaccine studies.[7]

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Details of the study

Study V503-002 conducted by Luxembourg and colleagues originally enrolled 1,935 boys and girls from 66 sites in Africa, Asia, Europe, Latin America, and North America to receive 3 doses of the 9-valent HPV vaccine, with follow-up for 12 to 36 months to monitor safety and immunogenicity.[8] In an extension of this investigation, Restrepo and colleagues revisited 40 of these sites in 13 countries to gather 10 years of long-term follow-up data.[7]

The final long-term follow-up cohort included 971 girls and 301 boys aged 9 to 15 at vaccination.

Results. At month 126, participants continued to have very high seropositive rates (81%–100%, depending on assay sensitivity and HPV type). There were no cases of high-grade cervical, vaginal, or vulvar dysplasia related to HPV strains covered in the vaccine.

FAST TRACK

Study participants who received 3 doses of the 9-valent HPV vaccine continued to have very high seropositive rates—81% to 100%, depending on assay sensitivity and HPV type

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Rates of infection in women with the vaccine-targeted HPV types were very low—54.6 per 10,000 person-years—compared with 927.4 per 10,000 person-years for HPV types not included in the vaccine. No adverse events attributable to the vaccine were reported.

Study strengths and limitations

Strengths of this study included the use of rigorous end points similar to those used in the initial efficacy studies for easy comparison. Limitations included the relatively small size, which precluded a robust assessment of adverse events, as well as the lack of controls. Furthermore, this study looked at children receiving 3 doses of HPV vaccine prior to the age of 15 and may not be generalizable to people who receive the vaccine at an older age or in fewer doses. ●

WHAT THIS EVIDENCE MEANS FOR PRACTICE

Previous studies have shown that the 9-valent HPV vaccine is effective and yields immunological responses within 4 weeks of receiving 3 doses, with sustained immunogenicity up to 36 months. The study by Restrepo and colleagues provides long-term follow-up data that demonstrated sustained immunological responses at 10 years following immunization, with no cases of high-grade intraepithelial neoplasia related to the covered HPV types and no adverse events. These results compare favorably with those of prior studies of the bivalent and quadrivalent HPV vaccines. The 9-valent HPV vaccine can be recommended for use in children aged 9 to 15 with excellent confidence regarding its safety and sustained effectiveness for at least 10 years after vaccination.

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